



## ALUMINUM DOORS

- INDUSTRIAL
- COMMERCIAL

CAMBAR MANUFACTURING CO. INC., 211 CALIFORNIA STREET, EL SEGUNDO, CALIF.

## FOREWORD



The desirability of lightweight, strong and torsionally rigid door panels for industrial, commercial, and residential overhead and sliding doors, has long been recognized. Accordingly, several years ago, the Cambar Manufacturing Co., Inc., pioneered the design and development of doors constructed entirely of aluminum to meet these requirements. Today, Cambar doors are the recognized standard in the industry for quality, economy and durability.

The elimination of weight in upward-acting or side-sliding doors has brought safer and easier operating conditions, minimized the size of hardware (with consequent reduction in maintenance and repair costs), and reduced the necessity of costly motorizing of doors to give efficient performance.

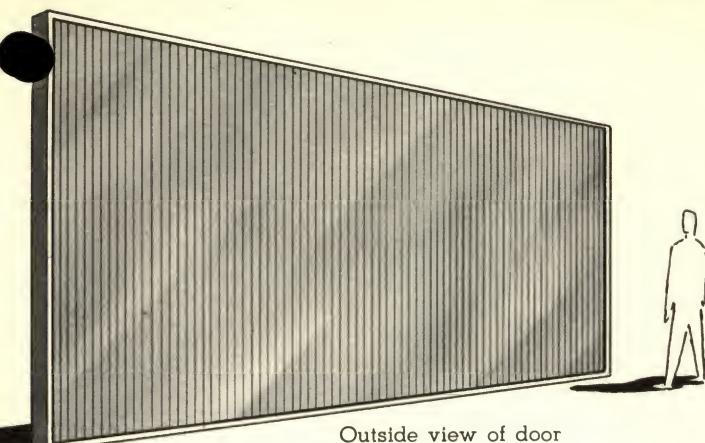
The use of aluminum has eliminated many of the problems which have never been satisfactorily solved by either wood or steel construction without tremendous increases in weight of the door panels. Corrosion, lack of torsional rigidity (so essential to satisfactory operation of overhead and sliding doors), sag deflection, and excessive weight have all been eliminated in the design of these doors. They are adaptable to all types of construction and their modern design gives a pleasing, finished architectural appearance.

Thousands of installations over many years attest to the fact that Cambar All-aluminum Doors offer the Architect, Engineer, Contractor, and Owner the ultimate in appearance, operation, and overall economy.

Competent engineers are available for dependable consulting service on your door problems.



# ALUMINUM INDUSTRIAL DOOR PANEL



Outside view of door

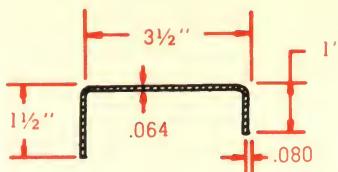
Many years of intensive design and development have been required to produce the Aluminum Door Panel shown here. Extensive analysis has been made to determine the correct aluminum alloys to use with particular emphasis on corrosive resistance, tensile strength, elasticity, etc. The structure is completely joined by heat treated aluminum rivets and no other method of attachment such as spotwelds or metal screws is recommended or used in Cambar Doors.

These doors are light in weight (approximately one pound per square foot) although fabricated from heavy gauge materials and specially designed aluminum extrusions. Each industrial type door is stressed for a fifteen pound per square foot windload which not only gives a sufficient safety margin against the elements but provides a stronger product for normal operational hazards. With the specially engineered beam structure no additional trusses are required and all overhead type panels are designed to maintain a specified maximum allowable sag of 1/300 of the span.

All Cambar doors are jig constructed to maintain flatness of plane accuracy of size, and they are built to the exact size of the opening to insure proper fit and operation.

Special inclusions in doors such as window sash, vents, etc., are individually engineered to meet building codes and specific customer requirements. Pass doors (sometimes referred to as "access," "entry," or "pilot") may be constructed in the door panels when desired. This frequently saves building space and cost by eliminating additional doors in the side wall of the building.

Succeeding pages in this catalogue show hardware and mountings for various types of doors. Careful study of the hardware will show the most desirable door for a particular installation.



Perimeter extrusion detail 6063T6—Cambar part No. 649.  
Forms top, bottom and ends of door—mitered at corners.

6063T6

extruded alum. angle bracing

Vertical .024 corr. aluminum (heavier gauges quoted on request)

INSIDE FACE OF A TYPICAL COMMERCIAL DOOR

6061T6 2 1/2" typ.

zee beams

1/2" (.024) corr.

"D"

"W"

DETAIL—VIEW A

flush rivets

064 6061T6 hardware mounting plate. Extends full height of door. Used only for doors No. 563 and No. 573.

All gussets and clips 6061T6. (Doors over 12' high are bridged with continuous angle tied to all beams.)

"W" (determined by size of hardware)

Width	Max. depth "D"
up to 11'	3 1/4"
11' to 14'	4 1/4"
14' to 17'	5 3/4"
17' to 21'	6 3/4"
21' to 25'	7 3/4"
25' + thickness furn. on request	

The table shows the overall thickness of doors from front of facing to back of beam. Thicknesses shown are for .024 corr.—heavier gauges may vary "D"

The depth, gauge, and number of beams is determined by size of door.

Beam determinations are calculated on the basis of a 15 lb. per sq. ft. wind load and a sag of 1/300th of width of door.

Manufacturer reserves right to make material and design substitutions that do not affect the strength or quality of door.

## Architects Specifications:

The door panel shall be constructed entirely of aluminum, using 6063T6 extruded frame and bracing members, 6061T6 formed structural beams, and .024 vertical corrugated aluminum facing, as manufactured by Cambar Manufacturing Company, Inc. The structure shall be torsionally rigid, with a maximum allowable sag deflection of 1/300 of the span, and shall be of all riveted construction.

When Pilot Doors are required, insert the following:

The pilot door shall be constructed with facing material and extruded aluminum channels identical to that used in the main door. The pilot door frame shall be extruded as one section from 6063T6 aluminum to form front and back trim, door stops, and weatherstripping.



## JAMB-TRACK DOOR No. 566

### industrial & commercial

Cambar Door No. 566 may be used on openings up to 25 ft. wide x 14 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

The door panel swings through the opening and back into the building. When fully open it does not extend beyond the front face of the building.

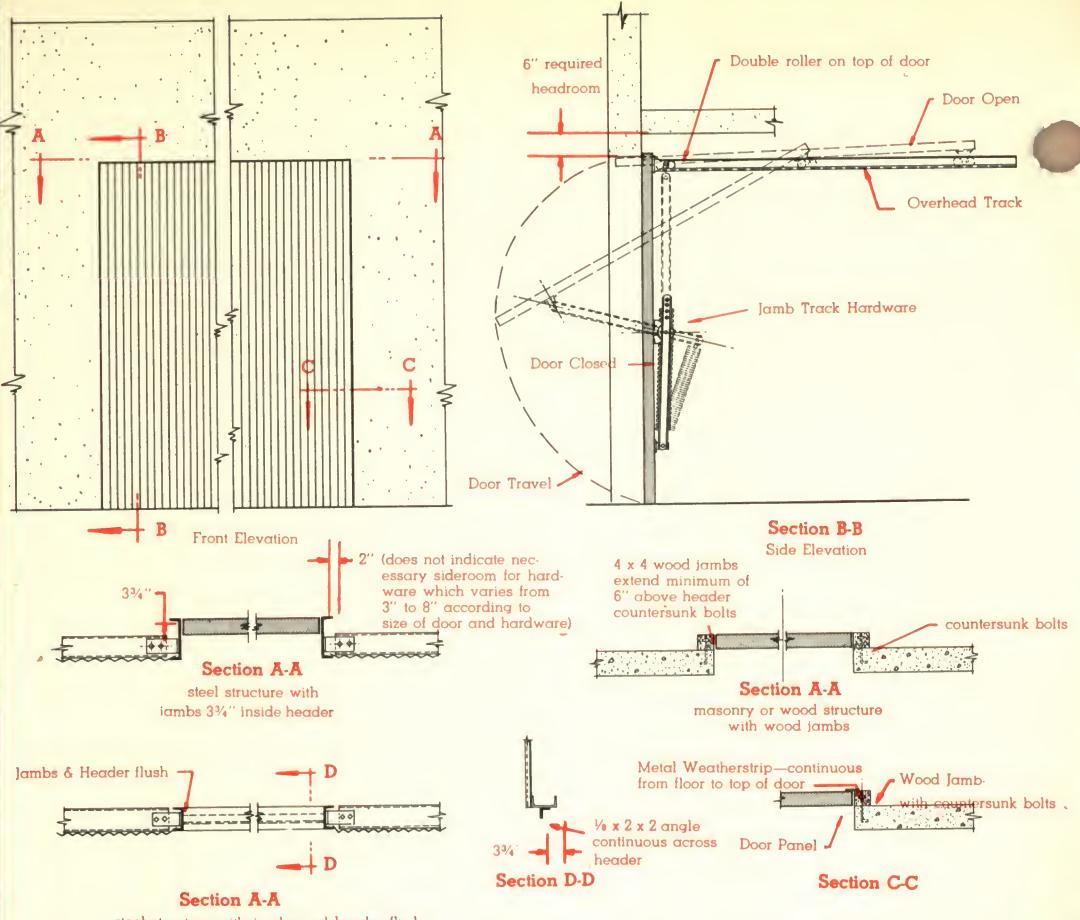
This door is one of the finest types for general usage and is particularly desirable for storage warehouses, school bus garages, service garages, etc.

#### ARCHITECTS SPECIFICATIONS:

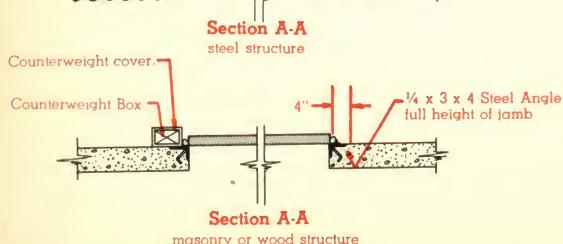
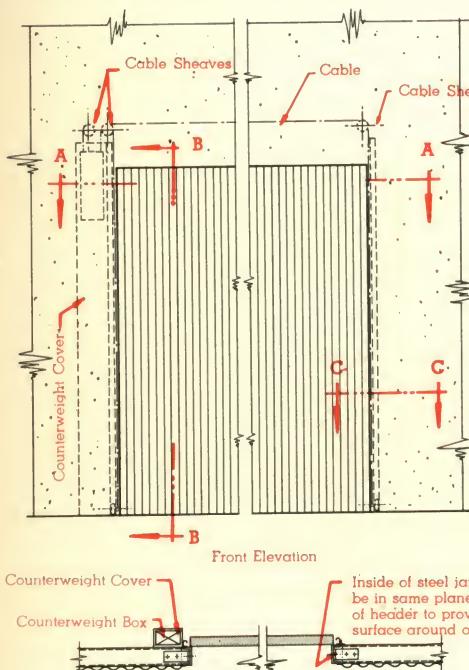
The door shall be Jamb Track Door No. 566 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

When more detailed specifications are desired use door panel specifications on page 3 and the following hardware description:

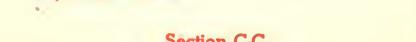
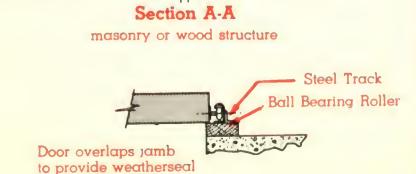
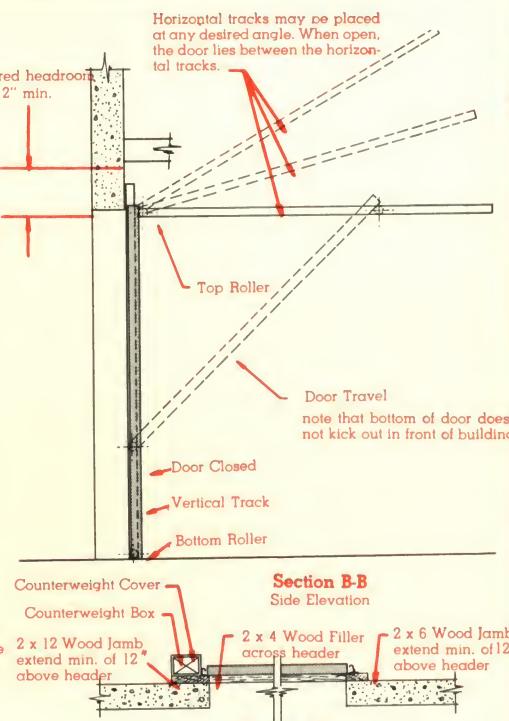
The hardware shall consist of a pair of actuated arms mounted on the building jamb and attached to the bottom corners of the door. Ball bearing rollers are attached to the top corners of the door and are guided by steel tracks attached to the jambs and extending back into the building. The entire system shall be properly balanced for easy operation. Weather-stripping shall be provided on both sides of the door for the full height of the opening.



NOTE: If structural conditions will not permit using above method of preparing opening, contact our engineering department.



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## COUNTERBALANCED TURN-OVER DOOR—No. 567

Cambar Door No. 567 may be used in openings up to 25 ft. wide x 12 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

The door is used where it is not possible to have the door panel swing out beyond the face of the building, during its opening or closing operations, making it advantageous for openings on truck and rail loading docks, sidewalks, streets, and property lines.

#### ARCHITECTS SPECIFICATIONS:

The door shall be Counterbalanced Turn-over Door No. 567 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

When more detailed specifications are desired use door panel specifications on page 3 and the following hardware description:

The hardware shall consist of ball bearing rollers mounted at the top and bottom of the door panel. The bottom rollers shall run in vertical steel tracks attached to the building jambs, and the top rollers shall run in horizontal steel tracks extending back into the building. All tracks to be 13 Gage Steel. The door and hardware shall be counterbalanced with an enclosed counterweight box, and the entire system shall be operated by a series of cables and sheaves properly balanced for easy operation.





## WAREHOUSE CANOPY DOOR

### No. 568 industrial

Cambar Door No. 568 may be used in openings up to 50 ft. wide x 20 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

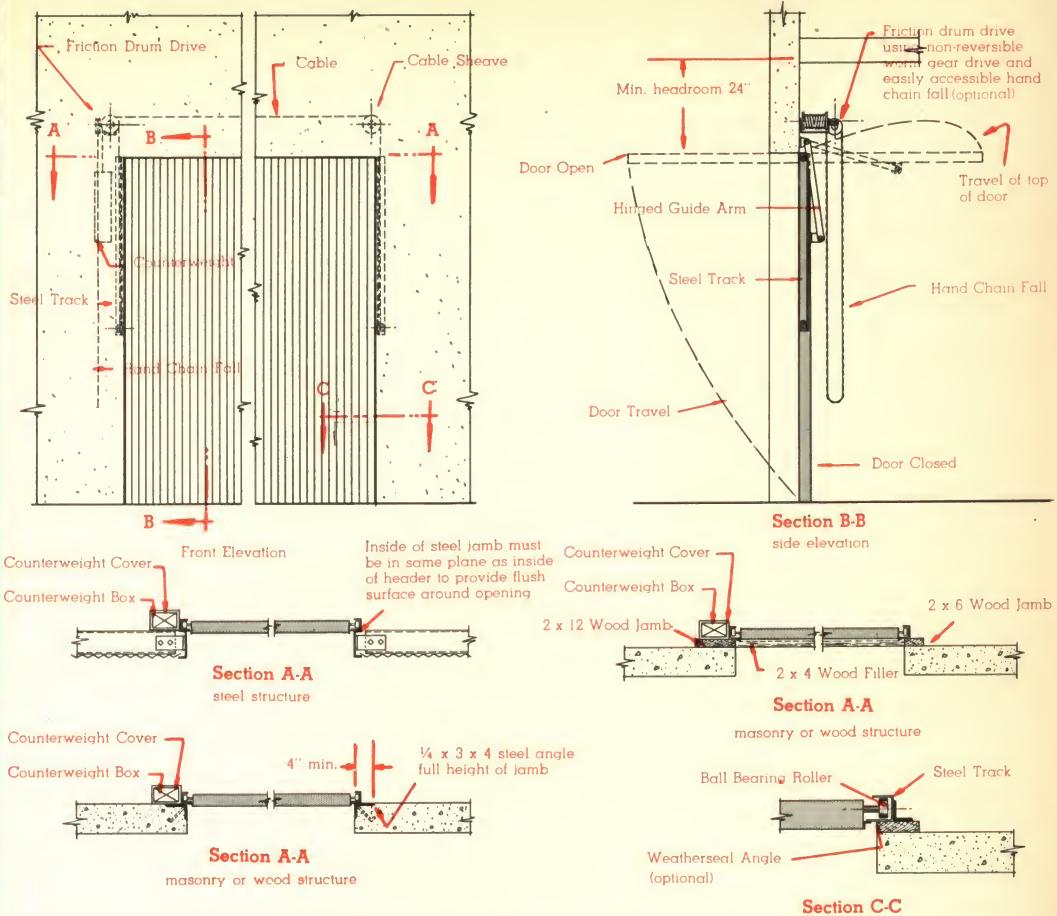
On doors not over 25 ft. wide x 12 ft. high, no hand chain hoist is required. This door is used principally on large openings for warehouses, railroad shops, storage buildings, light plane hangars, etc.

#### ARCHITECTS SPECIFICATIONS:

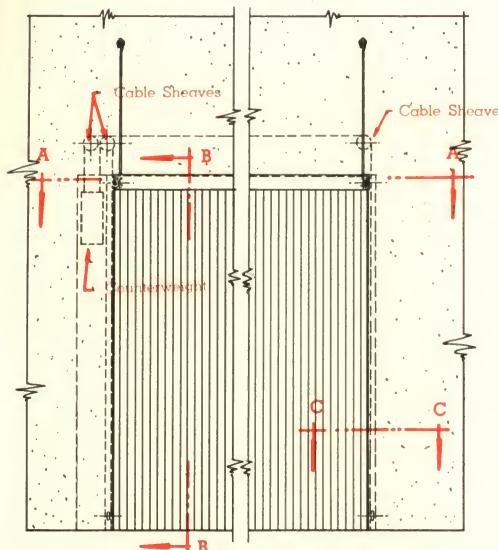
The door shall be Warehouse Canopy Door No. 568 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

The hardware shall consist of ball bearing rollers mounted at the center of the door panel, running in 13 Gage steel tracks attached to the building jambs and the top of the door shall be guided by a set of cantilever arms attached to the building wall and the door panel. The door and hardware shall be counterbalanced with an enclosed counterweight box, and the entire system shall be operated by a series of cables and sheaves properly balanced for easy operation.

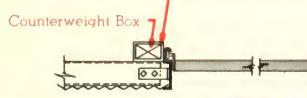
NOTE: If hand chain hoist is required, add the following: A hand chain shall be provided which will operate a locking worm gear drive to actuate the doors. A maximum of 20 lbs. pull on chain is required. Also, specify weatherstripping along the sides of the door, if desired.



NOTE: If structural conditions will not permit using above method of preparing opening, contact our engineering department.

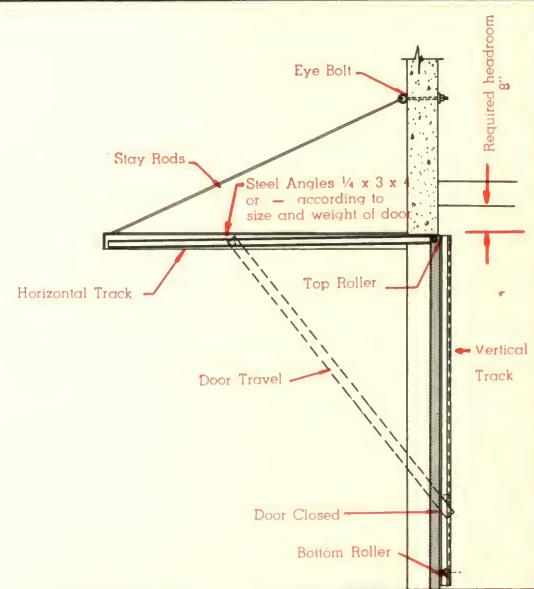


Front Elevation



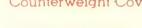
Section A-A

steel structure



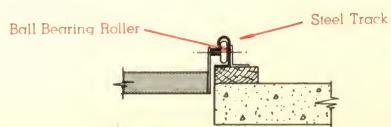
Section B-B

Side Elevation



Section A-A

masonry or wood structure



Section C-C

## OUTSIDE CANOPY DOOR

### No. 569 industrial & commercial

Cambar Door No. 569 may be used in openings up to 25 ft. wide x 12 ft. high. When doors approach maximum width or height consult our Engineering department for additional details.

The hardware is used to provide additional protection from the sun and rain or to leave the inside of the building unobstructed for hoists and lights, etc., making it advantageous for maintenance shops, patio type service garages, service stations, etc. The door panel shall automatically latch in both the open and close position.

#### ARCHITECTS SPECIFICATIONS:

The door shall be Outside Canopy Door No. 569 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

The hardware shall consist of ball bearing rollers mounted at the top and bottom of the door panel. The bottom rollers shall run in 13 Gage vertical steel tracks attached to the building jambs and the top rollers shall run in 13 Gage horizontal tracks attached to the top of the jambs and extending out onto a supporting steel canopy framework. The door and hardware shall be counterbalanced with an enclosed counterweight box, and the entire system shall be operated by a series of cables and sheaves properly balanced for easy operation.

NOTE: In designing the steel canopy framework it is advisable to contact our Engineering department for basic details and dimensions.



NOTE: If structural conditions will not permit using above method of preparing opening, contact our engineering department.



## TOP-HUNG SLIDING DOOR No. 570 industrial & commercial

Cambar Door No. 570 may be used as a single piece door in openings up to 20 ft. wide x 20 ft. high. In wider openings, from 20 ft. to 200 ft., the door panel may be used as Bi-parting or Multiple Leaf with the maximum size of each panel 20 ft. wide x 20 ft. high. When multiple leaf doors are desired or openings approach maximum width or height, consult our Engineering department for additional details.

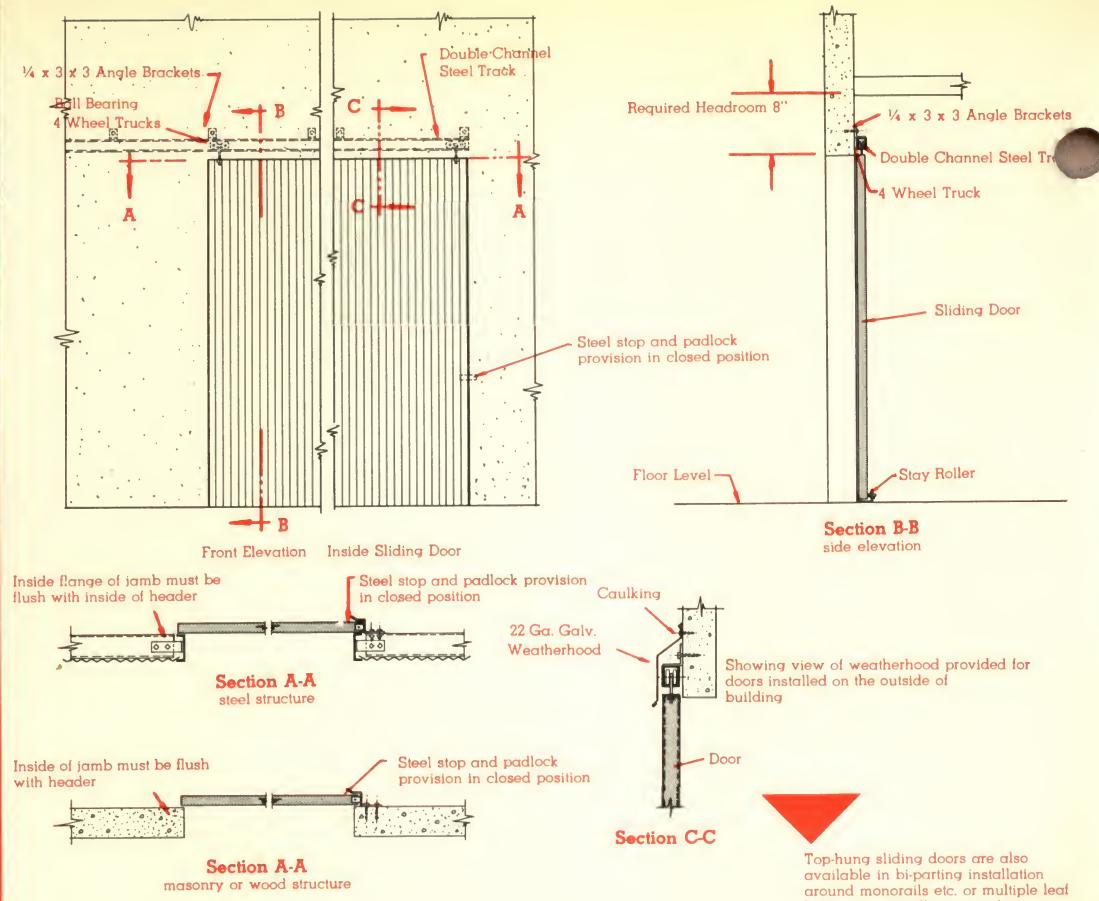
This door is used where it is not practical or desirable to use overhead doors and may be used on almost any type of industrial or commercial building.

### ARCHITECTS SPECIFICATIONS:

The door shall be Top Hung Sliding Door No. 570 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

The hardware shall consist of a pair of ball or roller bearing trucks mounted on the top of each door panel and running in an overhead steel track attached to the inside or outside of the building wall. A ball bearing stay roller shall be used to guide the bottom of a single piece or bi-parting door and steel stops shall be provided at the end of the travel. (Multiple leaf doors should be guided at the bottom with steel tracks in the floor.)

NOTE: If door is outside hung, weatherhoods of 22 gage galvanized sheet shall be used.



NOTE: If structural conditions will not permit using above method of preparing opening, contact our engineering department.

## SINGLE PANEL VERTICAL LIFT DOOR No. 571

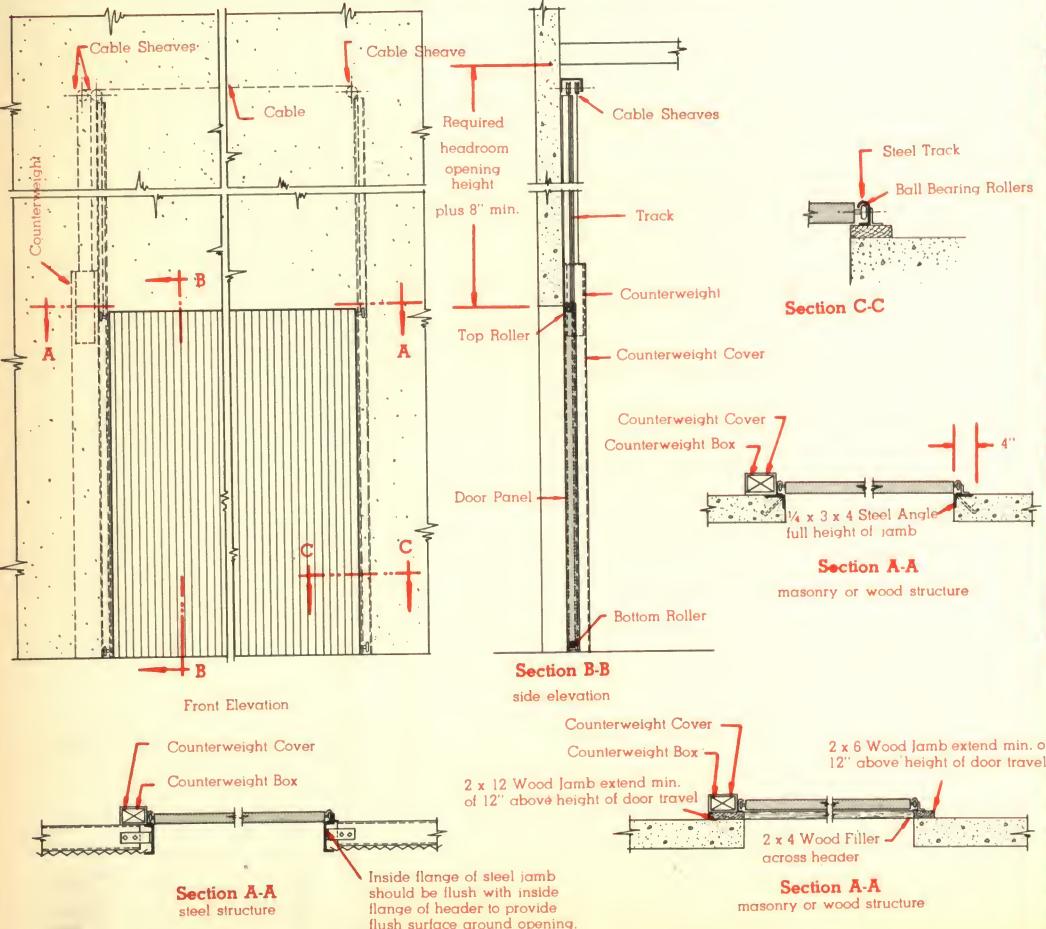
Cambar Door No. 571 may be used in openings up to 25 ft. x 15 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

This door is used where ample headroom above the opening is available, making it advantageous for openings on truck and rail loading docks, warehouses, garages, etc.

### ARCHITECTS SPECIFICATIONS:

The door shall be Single Panel Vertical Lift Door No. 571 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

The hardware shall consist of ball bearing rollers mounted at the top and bottom of the door running in 13 Gage steel tracks which are attached to the building wall. The door and hardware shall be counterbalanced with an enclosed counterweight box and the entire system shall be operated by a series of cables and sheaves properly balanced for easy operation.



NOTE: If structural conditions will not permit using above method of preparing opening, contact our engineering department.



## MULTIPLE PANEL VERTICAL LIFT DOOR No. 572

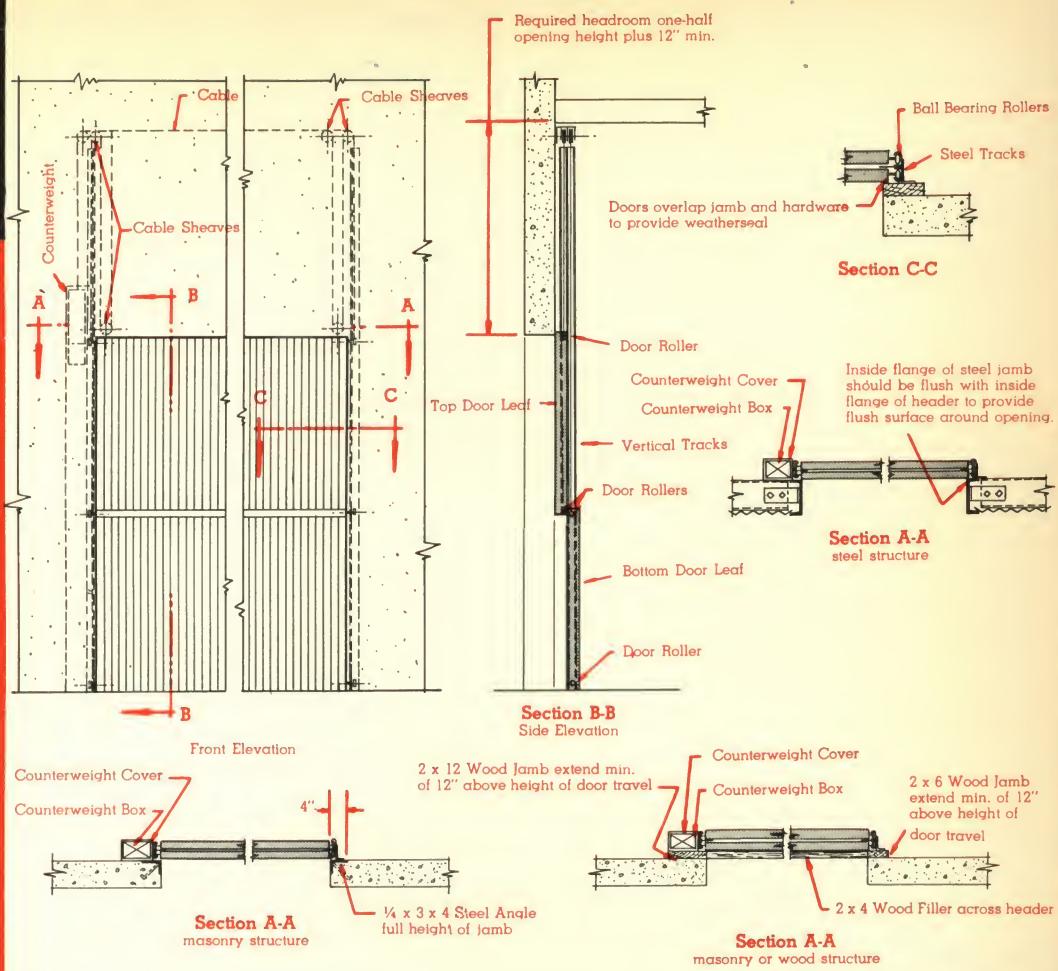
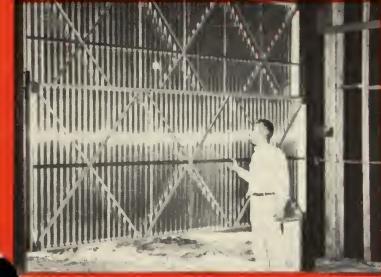
Cambar Door No. 572 may be used on openings up to 50 ft. wide x 20 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

This door is used where the desirable features of a vertical lift door are required but there is insufficient headroom for a single piece door, making it advantageous for openings on truck and rail loading docks, warehouses, garages, etc.

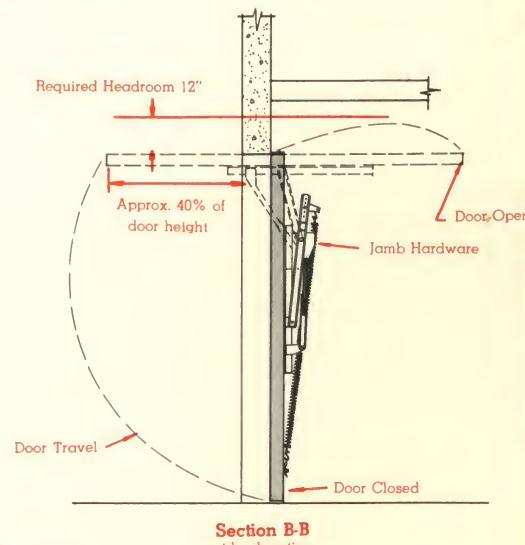
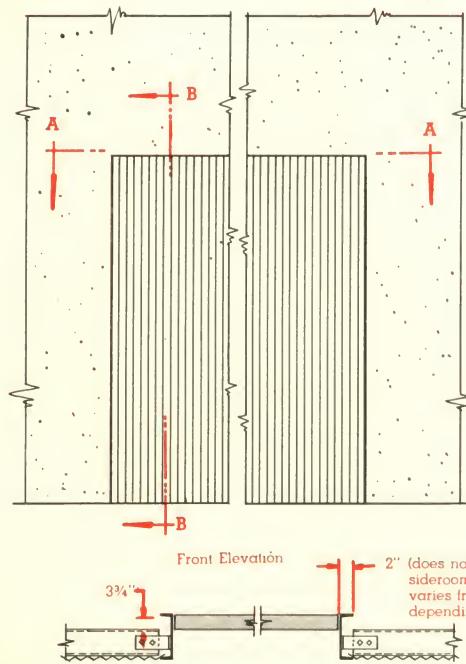
### ARCHITECTS SPECIFICATIONS:

The door shall be Multiple Panel Vertical Lift Door No. 572 manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

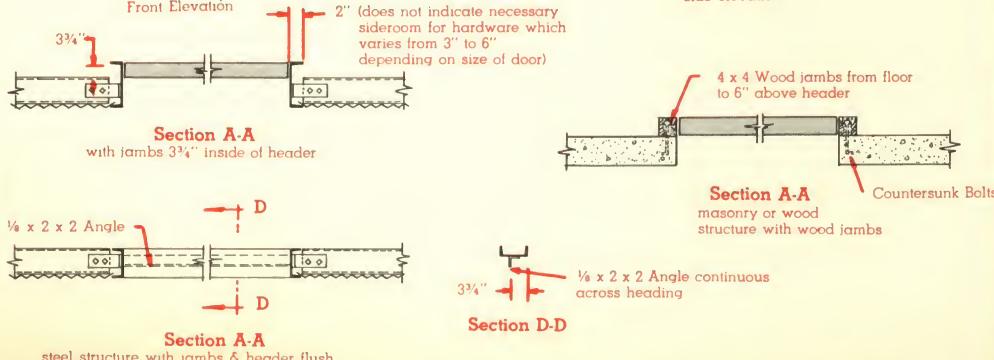
The hardware shall consist of ball bearing rollers mounted at the top and bottom of each panel running in 13 Gage steel tracks attached to the wall of the building. Each panel shall be individually guided by its own set of rollers and tracks. All panels shall be reeved together by a series of cables and sheaves in such a manner that all sections start to move together and arrive in the open or close position simultaneously. The door and hardware shall be counterbalanced with an enclosed counterweight box and the entire system properly balanced for easy operation.



NOTE: If structural conditions will not permit using above method of preparing opening contact our engineering department



Section B-B  
side elevation



## STANDARD JAMB DOOR

### No. 573

Cambar Door No. 573 may be used on openings up to 25 ft. wide x 10 ft. high. When doors approach maximum width or height, consult our Engineering department for additional details.

This door is used where economy is a prime factor, where a partial canopy may be desirable or where clearance within the building does not permit the door to travel back the full height of the opening. They are used on service garages, warehouses, etc.

### ARCHITECTS SPECIFICATIONS:

The door shall be Standard Jamb Door No. 573 as manufactured by Cambar Mfg. Co., Inc., El Segundo, California.

The hardware shall consist of a set of arms mounted on a bracket which attaches to the building jamb. These arms are attached to the sides of the door and pivot on the bracket actuated by springs attached to the main arm. The entire system shall be properly balanced for easy operation.



NOTE: If structural conditions will not permit using above method of preparing opening contact our engineering department

## TYPICAL CAMBAR INSTALLATIONS

JOSEPH SCHLITZ BREWING COMPANY  
Van Nuys, California

ZELLERBACH PAPER COMPANY  
Los Angeles, San Francisco, & Antioch, California

LOS ANGELES SEATTLE MOTOR EXPRESS  
Los Angeles, & Oakland, California

FORTIER TRANSPORTATION  
Los Angeles, & Oakland, California

HARVEY ALUMINUM COMPANY  
Torrance, California & The Dalles, Oregon

NORTH AMERICAN AVIATION, INC.  
El Segundo, Downey & Palmdale, California

LOCKHEED AIRCRAFT CORP.  
Burbank, & Palmdale, California

NORTHROP AIRCRAFT, INC.  
Palmdale, California

DOUGLAS AIRCRAFT CO., INC.  
El Segundo, Palmdale, & Edwards, California

CONVAIR AIRCRAFT  
Palmdale & Edwards, California

STANDARD OIL COMPANY OF CALIFORNIA  
El Segundo, California

GENERAL PETROLEUM CORP.  
Los Angeles, California

UNION OIL COMPANY  
California & Nevada

SHELL OIL COMPANY  
California

DISNEYLAND, INC.  
Anaheim, California

FORD MOTOR COMPANY  
Long Beach, California

LINK BELT COMPANY  
Los Angeles, California

TECHNICOLOR CORPORATION  
Hollywood, California

DENVER-CHICAGO TRUCKING COMPANY  
Los Angeles, California

DEAN VAN LINES  
Compton, California

BRANIFF AIRWAYS  
Dallas, Texas

ALTEC-LANSING COMPANY  
Anaheim, California

MCCULLOCH MOTORS CORP.  
Los Angeles, California

AMERICAN MACHINERY & FOUNDRY  
Glendale, California

UNIVERSITY OF SOUTHERN CALIFORNIA  
Los Angeles, California

EL CAMINO COLLEGE  
Los Angeles, California

LOYOLA UNIVERSITY  
Los Angeles, California

HOLLYWOOD TURF CLUB  
Inglewood, California

SCHOOL BUS GARAGES & SHOPS  
Numerous installations in California

STATE OF CALIFORNIA  
Bishop, Gibson, High Rock, San Bernardino,  
Spadra, Porterville, Norwalk, Chino

U. S. ARMED SERVICES BASES

More than a score of important installations throughout the  
United States and overseas with installations in Eniwetok,  
Okinawa, and Casa Blanca.



## TYPICAL CAMBAR INSTALLATIONS

JOSEPH SCHLITZ BREWING COMPANY  
Van Nuys, California

ZELLERBACH PAPER COMPANY  
Los Angeles, San Francisco, & Antioch, California

LOS ANGELES SEATTLE MOTOR EXPRESS  
Los Angeles & Oakland, California



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